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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/417,135	10/13/1999	KATSUHITO MIURA	P63943USO	7013

7590

10/30/2002

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400 SEVENTH STREET NW  
WASHINGTON, DC 20004

EXAMINER

MERCADO, JULIAN A

ART UNIT

PAPER NUMBER

1745

DATE MAILED: 10/30/2002

19

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/417,135

Applicant(s)

MIURA ET AL.

Examiner

Julian A. Mercado

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 August 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 36-50 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 12, 17. 6) ☐ Other: \_\_\_\_\_

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## DETAILED ACTION

### *Remarks*

This Office Action is responsive to Applicant's amendment filed August 9, 2002.

### *Continued Examination Under 37 CFR 1.114*

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 9, 2002 has been entered.

### *Claim Rejections - 35 USC § 102*

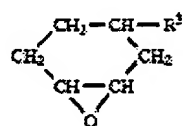
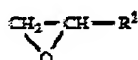
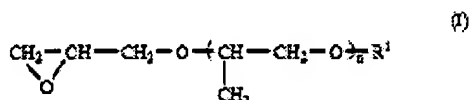
The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 36-50 are rejected under 35 U.S.C. 102(e) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Miura et al. (U.S. Pat. 5,968,681)

The rejection is maintained for the reasons of record as previously applied to claims 1-5 and 7-18. A reiteration here follows. Miura teaches a repeating unit derived from propylene oxide [I], a repeating unit copolymer derived from ethylene oxide [II], and monomers [III] and [IV] noticeably identical to instant formulas (III-1) and (III-2). (col. 2 line 4-30)

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The present invention provides a polyether copolymer  
 5 having a repeating structural unit comprising 5 to 95% by  
 mol of a monomer of the formula (I), 95 to 5% by mol of a  
 monomer of the formula (II) and 0 to 15% by mol of a  
 monomer of the formula (III) or (IV) as a crosslinking  
 10 component; the copolymer having a weight-average  
 molecular weight within the range from  $10^3$  to  $10^7$ .



The claimed range of "3 to 30% by mol of a repeating unit derived from propylene oxide" is anticipated by Miura to the extent that the disclosed range of 5 to 95% overlaps therewith.

As to a plasticizer, Miura teaches a plasticizer such as an aprotic organic solvent, *inter alia*. (col. 3 line 6-10)

A material having remarkably excellent ionic conductivity can be obtained by incorporating a plasticizer selected from an aprotic organic solvent, or a derivative or a metal salt of a linear or branched polyalkylene glycol or a metal salt of the derivative into a polymer solid electrolyte. 10

Applicant has submitted claims which are noted to be in product-by-process format. While the process limitations have not been given patentable weight as they fail to further limit the product claim, the prior art product appears to be the same or only slightly different from the

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claimed product since the prior art similarly teaches a ring polymerization catalyst. (col. 5 line 4-18)

The polymerization method for obtaining the polyether copolymer used in the present invention is a polymerization method for obtaining a copolymer by the ring opening reaction of the ethylene oxide portion, which is described in Japanese Patent Kokai Publication Nos. 154736/1988 and 169823/1987 (The disclosure of which is incorporated herein by reference). That is, it is obtained by reacting the monomers corresponding to the formulas (I) and (II) and crosslinking reactive monomer corresponding to the formula (III) at the reaction temperature of 10 to 80° C. under stirring, using a catalyst mainly composed of an organoaluminum, a catalyst mainly composed of an organozinc, an organotin-phosphate ester condensate catalyst, etc. as a ring-opening polymerization catalyst in the presence or absence of a solvent. In case of using an oxirane

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 36-50 are rejected under 35 U.S.C. 102(a) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Miura et al. (WO98/07772)

The examiner relies on U.S. Patent 6,162,563 which is an equivalent of the abovesited document.

Miura teaches a repeating unit derived from propylene oxide [I], a repeating unit copolymer derived from ethylene oxide [II], and monomers [III] and [IV] noticeably identical to instant formulas (III-1) and (III-2). (see claims 1 and 3)

As to a plasticizer, Miura teaches a plasticizer such as an aprotic organic solvent, *inter alia*. (col. 2 line 13-17)

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(3) a plasticizer selected from the group consisting of an aprotic organic solvent, and a derivative or metal salt of a straight-chain or branched polyalkylene glycol having a number-average molecular weight of 200 to 5,000 or a metal salt of the derivative.

As Applicant has submitted claims in product-by-process format, the process limitations have not been given patentable weight as they fail to further limit the product claim.

Notwithstanding, the prior art product appears to be the same or only slightly different from the claimed product since the prior art similarly teaches a ring polymerization catalyst. (col. 3 line 3-45)

The polymerization reaction can be conducted as follows. That is, the polyether copolymer can be obtained by reacting the respective monomers at the reaction temperature of 10 to 80° C. under stirring, using a catalyst mainly composed of an organoaluminum, a catalyst mainly composed of an organozinc, an organotin-phosphate ester condensate catalyst, etc. as a ring opening catalyst in the presence or absence of a solvent. The organotin-phosphate ester condensate catalyst is particularly preferable in view of the polymerization degree, or properties of the resulting copolymer. In the polymerization reaction, the reactive functional group does not react so that a copolymer having the reaction functional group is obtained.

### *Double Patenting*

Claims 36-50 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-28 of U.S. Patent No. 5,968,681 to Miura et al.

Claims 36-50 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 3, 9, 11 and 13 of U.S. Patent No. 6,162,563 to Miura et al.

Regarding the above, although the conflicting claims are not identical, they are not patentably distinct from each other because the instant weight percentages of each of the

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monomers in the electrolyte would have been obvious to the skilled artisan; absent of unexpected results, it is asserted that the weight percentages of the monomers are recognizably optimizable parameters for a result-effective variable such as the parent polymer's adhesive properties. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980)

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

### ***Response to Arguments***

Applicant's arguments filed June 10, 2002 as incorporated by reference in the present amendment have been fully considered, however, they are not persuasive.

Applicant submits that the *residue* of the monomer of formula (I) [emphasis added] in Miura is not found in the instant “polyether copolymer” of the claimed invention. This argument is not persuasive, as the scope of the present claims is noted to be open-ended, does not preclude any such residue from being contained in the polyether copolymer (I), and is absent of any limitation that delineates the claimed invention from any alleged residue present in the prior art. Additionally, should this residue result from the ring-opening polymerization reaction now claimed, this line of argument would be outside the scope of the presently claimed product as it is more closely relevant to a process-of-making limitation.

Applicant submits that as defined in claim 19 (to the extent that it may be applicable towards new independent claim 36) a monomer of formula (I) disclosed in Miura is not obtained. This argument is not persuasive, as it contradicts the claimed invention’s recitation of a polyether copolymer (I) as part of the solid polymer electrolyte which is similar if not patentably identical to the monomer of formula (I) disclosed in Miura.

As to the previous double-patenting rejection, Applicant submits that the rejection relied on the disclosure of Miura. In reply, the examiner submits that the double-patenting rejection as set forth in the May 23, 2001 Office Action solely relied on the patented claims of U.S. Patent 5,968,681 to Miura et al. (hereinafter Miura ‘681) while merely citing the disclosure in the March 7, 2002 Office Action as evidence to support the examiner’s position in response to Applicant’s request thereof. The present rejection based on Miura ‘681, however, invites Applicant to submit unexpected results to refute the examiner’s present position that the weight percentages of the monomers are recognizably optimizable parameters for a result-effective variable.



*Conclusion*

JP 62-169823 has been considered by the examiner as an English-language equivalent of RE 33,967, as indicted in the August 9, 2002 IDS, i.e. the "first" IDS which is noted to be a duplicate submission of IDS filed June 7, 2002. Applicant's clarification of the non-compliance issue raised by the examiner is gratefully acknowledged. The "second" IDS (submitted with the same date) cites WO97/39055, however, this document is presently not considered as it lacks an English-language translation, Abstract or statement of relevance. JP 7-206936 cited in the second IDS has been considered but only to the extent that only the Abstract is submitted with an English-language translation.

The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure. U.S. Patent 6,159,389 to Miura et al. is cited as a related document. U.S. Pat. 5,755,985 to Vallee et al. is cited of cumulative relevance.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian A. Mercado whose telephone number is (703) 305-0511. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan, can be reached on (703) 308-2383. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3599 for regular communications and (703) 305-3599 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

A handwritten signature in black ink, appearing to be "jam", written over the date.

October 23, 2002

A small handwritten signature in black ink.

October 23, 2002  
Receptionist  
Telephone Number  
(703) 308-0661